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From: Lynne Anderson

Sent: Monday, July 31, 2006 4:57 PM

To: AB98 Comments

Subject: Comments - Interim Guidelines for Examination of Patent Subject Matter Eligibility

Ms. Therkorn - Attached are IBM Corporation's comments.

Regards,

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IBM Corporation Comments in response to Notice of Proposed Rule Making “*Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*”, 70 Fed. Reg. 75451 (December 20, 2005)

IBM appreciates the opportunity to comment on the proposed Interim Guidelines. Patents play a vital role in the United States economy. The public is harmed when a patent is issued with invalid claims, claims that do not adequately reflect the scope of the disclosed invention, or claims that do not recite statutory subject matter. Therefore, we support the United States Patent and Trademark Office’s continuing efforts to improve the patent system. Although the Office articulated a particular interest in receiving comments addressing the five different areas delineated on page 75452 of the Federal Register Notice, our comments are directed only to the patentability of signal claims.

At Annex IV(c), page 57 of the Interim Guidelines, the USPTO concludes that signal claims are not patentable subject matter because the claims do not fall into one of the four statutory classes of 35 U.S.C. § 101. We assert that signal claims are in fact statutory subject matter eligible for patent protection. We describe below how courts have consistently found signal claims to be patentable, and expressed principles consistent with these findings. However, notwithstanding our view as to the patentability of signal claims, we are concerned about the inherently transitory nature of signals and the potential for this characteristic of signals to result in ill-defined or overly broad claims. Thus, we also stress the need for strict adherence to the requirements of 35 U.S.C. § 112.

The patentability of signals is not a new concept. The Supreme Court found a claim covering a signal patentable subject matter in 1854 when it upheld such a claim¹ in one of Samuel Morse’s telegraph patents. See *O’Reilly v. Morse*, 56 U.S. 62 (1854).

¹ I claim as my invention the system of signs consisting of dots and spaces and of dots, spaces and horizontal lines for numerals, letters, words or sentences substantially as herein set forth and illustrated for telegraph purposes.

Signals are articles of manufacture. More recently, the courts have interpreted the term “manufacture” as used in 35 U.S.C. § 101 to mean “the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties or combinations, whether by hand labor or by machinery.” *Diamond v. Chakrabarty*, 447 U.S. 303, at 308, 206 (1980) (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11 (1931)). The USPTO asserts at Annex IV(c), page 56 of the Interim Guidelines that the courts definition of manufacture requires physical substance, which signals do not have. However, this interpretation is inconsistent with the courts. The Federal Circuit has consistently held that reading limitations into Section 101 regarding subject matter that may be patented where the legislative history does not indicate that Congress clearly intended such limitations is improper. See *In re Alappat*, 33 F.3d 1526, 1542 (Fed. Cir. 1994) (en banc); see also, *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998); *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1064 (Fed. Cir. 1992) (Rader, J., concurring).

Furthermore, computer software that is embodied in a signal, whether a carrier wave, baseband, or otherwise, does not fall within any of the three recognized exceptions of patentable subject matter. The signal is not a law of nature, natural phenomenon, or abstract idea. Instead, the signal is an article of manufacture that arises from the practical application of electromagnetic energy.

A signal is also the result of a physical transformation analogous to that found patentable in *Diamond v. Diehr*, 450 U.S. 175 (1981). Electromagnetic energy is transformed from a natural state or some intermediate state to form a data signal. Such a signal is physically different and has undergone a physical transformation from its original state. The key factor is that a physical transformation has occurred - not the extent of the transformation. The resulting signal is the product of a physical transformation which would not exist absent the transformation.

The courts have further construed 35 U.S.C. § 101 as defining patentable subject matter to be that which has a practical application that produces a useful, concrete, and tangible result. See *State Street Bank*, 149 F.3d at 1373-74. A signal is a practical application that produces a tangible result. The result of the application of such signals is readily measurable and because it enables the function of the systems in which it is implemented – enables useful results in the operation of the computer systems. A signal, whether transmitted via a wire or wireless technology, can be a unique signal specifically designed to convey specific information or data. A signal is part of the technology that enables computer-encoded functions to operate. Thus, a signal may transmit process steps so that a useful, concrete and tangible result is achieved (e.g. in a computer).

Additionally, at Annex IV(c), pages 56-57 of the Interim Guidelines, the USPTO further avers that a signal is not a manufacture because it does not fall into the definition of a “manufacture” defined as being a residual class of product in 1 *Chisum on Patents*, §

1.02[3] (citing W. Robinson, *The Law of Patents for Useful inventions* 270 (1890)). The Office concludes that, “[a] product is a tangible physical article or object, some form of matter, which a signal is not”.

However, the tangible nature of a product is not a requirement for patentability under 35 U.S.C. § 101. The Supreme Court did not state that the definition of manufacture under Section 101 requires a tangible article in either *American Fruit Growers* or *Chakrabarty*. Also, as noted above, the Federal Circuit has warned against engrafting additional requirements on to the definition of patentable subject matter under Section 101. But, even if the Office maintains such a tangibility requirement for patentability under Section 101, a signal is a tangible product under any interpretation of such term. According to *Webster’s Third New International Dictionary of the English Language Unabridged* 2337 (Philip Babcock ed., 1993), tangible means “able to be perceived as materially existent.” Signals, albeit *transitory* in duration, exist in reality and have properties that are physically measurable because they are typically comprised of electron flows that vary over time. See Harry Newton, *Newton’s Telecommunications Dictionary* 244 (17th ed. 2001), see also, *A Dictionary of Physics* (John Daintith ed., 2000). Thus, signals may be sensed or perceived using appropriate electronic equipment and its properties can be analyzed and manipulated as desired.

Signals also fall within the definition of computer usable media or computer readable media. A computer is able to detect the signal and recover the computer program embodied therein. It makes no difference whether the computer program is embodied in a physical media such as a hard drive or computer memory or within a data signal. As stated above, a signal is a tangible product that falls within the statutory categories of patentable subject matter. The underlying program is usable by the computer and is thus patentable as reflected in the Interim Guidelines, Annex IV(c), page 57:

[F]rom a technological standpoint, a signal encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.

Therefore, we submit that signal claims fall within at least one of the statutory classes of invention under 35 U.S.C. § 101 whether claimed specifically as a signal or whether claimed as a computer program product. Signal claims are necessary to properly protect and inventor’s interest in their invention. Absent such claims, the public would be free to exploit the patentee’s invention.

However, because signals are inherently transitory, there is a high degree of risk that claims directed to signals can be drafted in a manner that is indefinite. The scope of these claims must be clear so that the public may understand their metes and bounds in order to determine whether they are infringing. Therefore, when examining signal claims, we caution that examiners must carefully adhere to the requirements for

patentability specified in 35 U.S.C. § 112 in determining whether the claimed invention meets all the criteria for patentability.

For example, because one of ordinary skill in the art must be able to practice the invention, it is important to determine that the scope of enablement indicated in the specification is commensurate with the claims in order to prevent overly broad claiming. The examiner should also conduct an intensive review of the written description of each patent application to ensure that the inventor has demonstrated possession of the invention. It may also be appropriate to require additional detailed description for signal claims to adequately demonstrate that each of the criterion of 35 U.S.C. § 112 are met. Furthermore, patent scope can be regulated using the requirements of 35 U.S.C.

§§ 102, 103 and 112 where the subject matter is determined to be patentable under 35 U.S.C. § 101. See *In re Foster*, 438 F.2d 1011, 1014-16 (C.C.P.A. 1971).

In conclusion, as stated above, IBM believes that signal claims are patentable subject matter under 35 U.S.C. § 101. If the USPTO ultimately agrees, while we understand that there is no single specific way to properly draft signal claims, we recommend that guidelines specifically acknowledging the patentability of signal claims clearly instruct examiners regarding acceptable claim language. Claim scope must be clear and must reflect the contents of the specification so that patent owners and patent challengers can avoid the expense and uncertainty of litigation to characterize claim scope after the patent issues.

Respectfully submitted,

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